

B5
amended.

16. (Amended) A rotary machine according to claim 1, further comprising:
at least one supplemental air outlet positioned upstream of the at least one air outlet for
permitting a portion of the internal air flow through the interior working chamber to exit the case
prior to reaching the at least one air outlet.

B6

20. (Amended) A method of cooling a rotary machine having a case with an
exterior surface exposed to a supply of ambient air, a rotary shaft supported within an interior
working chamber of the case, and at least one machine component supported for rotation on the
rotary shaft within the working chamber, the method comprising the steps of:

providing at least one air inlet and at least one air outlet in fluid communication with the
working chamber;

mounting a first fan for rotation on the rotary shaft within the working chamber;

mounting a second fan for rotation on the rotary shaft within a plenum on one end of the
machine and exterior to the case;

arranging the first fan to create an internal air flow through the working chamber of the
case from the at least one air inlet and over the at least one machine component to the at least one
air outlet; and

arranging the second fan both to create an external air flow from the plenum back over
the exterior surface of the case and to assist the first fan in creating the internal air flow through
the working chamber.

REMARKS

Claims 1-20 are pending in the application. By this response, claims 1-20 remain pending
and claims 1, 3, 4, 6, 12-16, and 20 have been amended.

Each of the objections and rejections is addressed separately below. The applicant
believes that each objection and rejection should be withdrawn in view of the foregoing
amendments and the following remarks. Claims 1-20 are believed to be in condition for
allowance over the art of record.

Objection to Supplemental IDS

The supplemental IDS submitted on February 28, 2001 and received in the Office on March 5, 2001 has been objected to for not including a PTO form 1449 or a copy of the single cited reference, Colwell, U.S. Patent No. 5,375,651. The applicant respectfully submits that each necessary item was submitted with the IDS. A copy of the patent was included along with a PTO form 1449, as is shown by the copy of the transmittal attached hereto. For the convenience of the examiner, a copy of the entire Supplemental IDS submission is attached to this paper, including the Colwell patent and the form 1449. Since the applicant believes all the requirements were met at the time of submission, no fee is believed to be due at this time. However, if further proof is necessary, the examiner is requested to contact the undersigned.

Objection to the Specification

The abstract has been objected to for including the phrase "is disclosed" therein. The abstract has been amended herein to eliminate this phrase and to correct several noted grammatical errors. No new matter has been entered. The objection to the specification is believed to be overcome and should be withdrawn based on these grounds.

Claim Rejections - 35 U.S.C. §112

Claims 1-19 have been rejected under §112, second paragraph, as indefinite. Specifically, claim 1 has been rejected for containing terms ("air" and "case exterior surface") lacking antecedent basis. Claim 1 has been amended to eliminate reference to "air" and has also been amended to eliminate the "case exterior surface" recitation. Claim 1 has been similarly amended to eliminate a similar "case opposite end" recitation. Claim 1 has also been amended to clarify the "air" and "moving air" recitations by defining an --internal air flow-- and an --external air flow-- relative to portions of the machine.

Claims 6 and 12 have been rejected for containing terms ("additional air" and "air", respectively) also lacking antecedent basis. Claims 6 and 12 have been amended herein to coincide with the amendments to claim 1, thus overcoming the antecedent basis rejection for each of these terms. Claims 3, 4, 13-16, and 20 have been similarly amended to coincide with the amendments to claim 1. All of these amendments have been made merely to clarify the description relating to "air" and "moving air" relative to portions of the machine. No new matter has been entered, and the claims have not been effectively narrowed.

Each of the rejections under §112, second paragraph, is believed to be overcome and should be withdrawn based on these grounds.

Claim Rejections - 35 U.S.C. §102

Claims 1-5 and 11 have been rejected under §102(b) as anticipated by Onjanow, U.S. Patent No. 3,610,975 (Onjanow). Claims 1-3, 5-10, and 12-20 have been rejected under §102(b) as anticipated by Baumann et al., U.S. Patent No. 3,749,953 (Baumann). For at least the reasons provided below, these claims are not anticipated by either of the Baumann and Onjanow references.

Independent claims 1 and 20 as originally filed recite **a case** *as defining an interior working chamber within which a machine component and a first fan are housed*. The first fan is arranged to create an *internal air flow through the working chamber*. Further, each of these claims recites a second fan positioned *within a plenum of a cowl that is attached exterior to the case*. Also, these claims recite an annular exhaust opening in a cowl on one end of the machine *through which an external air flow is passed over the exterior surface of the case*. The second fan is recited as **both** *creating the external air flow that flows over the exterior surface of the case* and *assisting the first fan in creating the internal air flow*. Neither Baumann nor Onjanow teaches the claimed combinations.

To illustrate, Baumann discloses a motor 10 with machine components including a rotor 13 and a stator 12. The stator 12 has a circumferential frame 20 attached thereto, which is an integral part of the stator (see col. 3, lines 23-34), not part of a case housing the stator and rotor. The motor 10 has end shields 18 and 18' spaced from ends of the rotor and stator. The end shields define working cavities 19 and 19' at opposite ends of the rotor and stator. A wall 44 is mounted exterior to the end shield 18.

In Baumann, air is moved by fan blades 22 carried by the rotor 13 within the cavity 19 to cool one end of the rotor and stator. Air is also moved by fan blades 22a carried by the opposite end of the rotor 13 within the cavity 19' to cool only that end of the rotor and stator. The air exits these cavities and the motor 10 through orifices 28 and contacts the fins 21 of the stator frame 20. None of the air exiting the orifices 28 is directed toward or is passed over the circumferential parts of the end shields.

Air is also moved in Baumann by an auxiliary fan 48. The fan 48 is housed within a plenum or cavity 41 of the wall 44. Ambient air is drawn into the cavity 41 and is then **directed only into the working cavity 19** through orifices 27 to assist in cooling only the one end of the

rotor and stator in the cavity 19. No air is directed from the cavity 41 to any exterior part of the motor 10. Thus, the fan 48 only assists in creating the internal air flow in the Baumann motor.

In comparison to claims 1 and 20, none of the auxiliary fan air in Baumann is directed over any exterior portion of a motor case. Further, no air from the auxiliary fan is directed through an *annular exhaust opening of the wall 44* to pass over any exterior part of a case. No air from the cavity 41 of the wall 44 exits directly to any exterior surface of the motor 10, such as the end shields 18 or 18'. As clearly shown in FIG. 1 of Baumann, all air flowing from or exiting the motor 10 is from the orifices 28 of the working cavities 19 and 19', and not from the plenum or cavity 41.

The end shields in Baumann are the exterior case parts of the motor of Baumann. All exhaust air from the motor 10 is directed *away from the shields 18 and 18', and away from the case*. Thus, no external air flow in Baumann is directed over any portion of a case. The Baumann fan 48, as well as the fan blades 22 and 22a, only assist in creating internal air flow for the rotor and stator of the motor 10. None of the fans 22, 22a, and 48 causes air from the motor to pass over any part of a case for the rotor or stator.

Further, the official action has not acknowledged the recited combination of a cowl exterior of a case, a plenum in the recited cowl, a second fan in the recited plenum, an annular exhaust opening of the recited cowl, and an external air flow directed from the recited plenum through the recited exhaust opening over the exterior surface of a case. Baumann discloses no such combination.

Thus, Baumann fails to disclose or suggest all of the limitations of independent claims 1 and 20. As a result, claims 1 and 20 and the respective dependent claims are neither anticipated nor rendered obvious by the teachings of Baumann.

Onjanow similarly teaches a motor having no exterior case. Onjanow teaches a frame 10 that houses a stator with a frame 22 that has fins 24 extending therefrom. A plurality of passages 23 are formed internal to the frame 10. The passages do not communicate with an exterior of the frame or with the fins and are not exposed to ambient air (see FIG. 2). Thus, the wall 22 cannot be a case having an exterior surface exposed to ambient air, as the official action incorrectly states.

Onjanow has two internal fans 20 and 21 that circulate only an internal air flow within the frame 10 (see FIGS. 1 and 2, and col. 2, lines 50-75). Onjanow has two external fans 34 and 36 that circulate air only external to the frame 10 and end brackets 18 and 19. None of the four fans 20, 21, 34, and 36 can create an internal air flow and an external air flow as is recited for the

second fan in claims 1 and 20. Each fan in Onjanow only performs one function, to create air flow either in an interior portion or over an exterior portion of the motor. No disclosed fan in this reference can accomplish creating both internal and external air flow.

Thus, Onjanow fails to disclose or suggest all of the limitations of independent claims 1 and 20. As a result, claims 1 and 20 and the respective dependent claims are neither anticipated nor rendered obvious by the teachings of Onjanow.

Claim Rejections - §103

Claim 4 has been rejected under §103(a) as obvious over Baumann in view of Wiard, U.S. Patent No. 1,267,828 (Wiard). Claim 4 is dependent from claim 1. As discussed above, Baumann fails to disclose or suggest all of the limitations of claim 1. Wiard fails to disclose the deficiencies of Baumann. For example, both Baumann and Wiard fail to disclose a cowl exterior of a case, a plenum in this particular cowl, a second fan in this particular plenum, an annular exhaust opening of this particular cowl, and an external air flow directed from this plenum through this exhaust opening over the exterior surface of a case. Further, both Baumann and Wiard fail to disclose such a second fan that is arranged both for assisting the first fan in creating the internal air flow and creating an external air flow through an exhaust opening of a cowl in which the second fan is positioned such that the external air flow is passed over the exterior surface of a case.

The combination of Wiard and Baumann, thus, fails to teach all of the limitations of independent claim 1. As a result, dependent claim 4 is not rendered obvious by the combined teachings.


CONCLUSION

The applicants believe that claims 1-20 are in condition for allowance in view of the foregoing amendments and remarks. Reconsideration and allowance of these claims is hereby respectfully solicited.

The Examiner is invited to contact the undersigned at the telephone number listed below in order to discuss any remaining issues or matters of form that would place this case in condition for allowance.

Respectfully submitted,

MARSHALL, GERSTEIN & BORUN
233 S. Wacker Dr.
6300 Sears Tower
Chicago, Illinois 60606
(312) 474-6300


Bryan J. Lempia
Reg. No. 39,746

May 21, 2002